Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

diseases are scarcely to be found. The general conclusion is that the small part which fungi play in the plant diseases of the tropics is not due to the absence of fungi, but the tropical conditions that influence the hosts in their relation to parasites.—J. M. C.

Soil acidity.—DAIKUHARA[10] finds that more than 75 per cent of the soils of Japan and Korea are acid, while the Chinese, South Oceanic, and European soils show little or no acid. This is due to the difference in geological formations, climatic conditions, and fertilization methods. Soils of acid rock origin show the most prevalent acidity, those of basic origin less, and those of laval ash are generally free from acids. Mesozoic formations are most commonly acid; tertiary, paleozoic, and diluvial next; and alluvial formations least. The condition in Japan and Korea is related to the common occurrence of acid soils in the United States. The author finds that more than half of the cases of acidity are due to aluminium and iron compounds of acid reaction that are adsorbed by the colloids of the soil and set free upon the addition of such fertilizer salts as KCl, K_2SO_4, KNO_3, and NaCl. In these soils fertilizing with neutral salts alone often proves very detrimental, but fertilizing with neutral salts plus lime is highly beneficial. More than 50 per cent of the cases of soil acidity in Japan and Korea are due to this colloidal phenomenon. The author cites from mineralogies a number of iron and aluminium compounds that are acid in reaction, as phosphates, double salts of silicates, etc. It was already known that negative colloids of the soil often render lime-poor soils acid by adsorbing the basic ion of neutral salts and setting free the acid. The author speaks of his finding as a newly discovered source of soil acidity. He has developed a test for soil acidity that shows advantages over the litmus, Baumann and Gully, or the Loew tests. He has also evolved a method for the quantitative determination of soil acidity. The acid soils generally bear little lime, and the lime factor is unfavorable, owing to the excess of magnesium.

We are now coming to recognize that many acid-forming processes take a part in the dissolution of lime from the soil and the final rendering of it acid. The two absorption processes described above are only two of the several known.[11]—WILLIAM CROCKER.

Field physiology of cotton.—BALLS and HOLTON[12] have published an article on analysis of agricultural yield which exemplifies the application of

---

[10] DAIKUHARA, G., Über saure Mineralböden. Bull. Imp. Cent. Agr. Exp. Sta. Japan **2**:1–40. 1914.

[11] Readers will be interested in the following citations from American literature, in addition to the literature in the foregoing paper: HARRIS, J. E., Soil acidity and methods for its detection. Science N.S. **40**:491–493. 1914. TROUG, E. A., A new method for the determination of soil acidity. Science N.S. **40**:246–248. 1914. BARKER, J. F., and COLLISON, R. C., Ground limestone for acid soils. Bull. 400. Geneva Exp. Sta. New York. 1915.

[12] BALLS, W. L., and HOLTON, F. S., Analysis of agricultural yield. Part I. The spacing experiments with Egyptian cotton, 1912. Phil. Trans. Roy. Soc. London B **206**:103–180. 1915.

very accurate scientific methods to the problem of crop yield. The work, with its excellent analytical methods, deserves the careful attention of students of field crop production. When such methods are in general use in this phase of agronomy, the results and conclusions gained will carry with them much more weight and dependence. One is especially impressed with daily determinations of growth rate and flower and boll opening, which make possible the evaluation of accidental and temporary factors. Aside from the important contribution to method in analysis of agricultural yield, which after all is its greatest value, the article also contributes some clear-cut conclusions upon spacing as effecting production in the Nile valley, as follows: "(*a*) the experiment shows that the yield of a cotton crop is primarily dependent on the number of flowers which it forms; (*b*) the normal extension of the root system of an isolated cotton plant can utilize more than 2 m.^{2} of soil surface in soil which is more than 2 m. deep; (*c*) the plants in the field crop have only 0 18 m.^{2} allowed them or less; most of the phenomena of field crop physiology in the fruiting seasons are traceable to the interference of one root system with another; (*d*) the yield per unit area of the conventional spacing of the Egyptian Fellah is the maximum obtainable under the limitations of field cultivation (two plants per hole, each hole 0.34 m.^{2}), (*e*) the sources of error in field experiments with cotton can be traced to (1) soil variation, especially below one meter depth, (2) insufficient frequency of observation, whereby accidental episodes cannot be distinguished from normal sequences; (3) fluctuations of single plants, heterogeneity of commercial varieties, and normal physiological variations from day to day."—WILLIAM CROCKER.

Geotropism of the grass node.—It is well known that lodged grass stems recover their vertical position by growth on the lower flank of the older mature nodes. Gravity, acting transversely on the stem rather than longitudinally, incites growth in these otherwise mature regions of the stem. ELFVING showed that these nodes are incited to growth when the stems are rotated with transverse exposure on the clinostat, thus giving a diffuse all-sided action of gravity; but in this case growth is equal on all flanks and no bending results. RISS[13] has attempted to analyze more fully the mode of action of gravity in this behavior. She finds that when the gravity stimulus is applied intermittently but equally (intermittent clinostat) on two opposite flanks, the growth is greater than when it acts equally (continuous clinostat) on all flanks. By means of a compound centrifuge clinostat,[14] she has applied a centrifugal stimulus of one gravity transversely (intermittently and continuously as above), at the same time the organ held its vertical position in relation to the pull of gravity. While the transverse stimulus thus applied incites growth, its effect is far less than in the absence of the longitudinal pull of gravity.

[13] RISS, M. M., Über den Geotropism der Grasknoten. Zeitschr. Bot. 7:145–170. 1915.

[14] See BOT. GAZ. **58**:89. 1914.